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# Quality Engineering Test Report

**SERIES: LPS-100 100.8 WATTS SIGLE OUTPUT SWITCHING POWER SUPPLY**

**SAMPLE: A.LPS-100-3.3 3.3V / 20A D.LPS-100-12 12V /8.4A G.LPS-100-24 24V / 4.2A**
**B.LPS-100-5 5V / 20A E.LPS-100-13.5 13.5V /7.5 A H.LPS-100-27 27V / 3.8A**
**C.LPS-100-7.5 7.5V / 13.3A F.LPS-100-15 15V / 6.7A I. LPS-100-48 48V / 2.1A**

| NO | TEST ITEM | TEST CONDITION / SPECIFICATION | RESULT | VERDICT |
|---|---|---|---|---|
| 1 | AC INPUT VOLTAGE RANGE | I/P:TESTING SPEC:88~132V 176~264V<br>O/P:FULL LOAD | A : 129V~267VAC | P |
| 2 | LINE REGULATION | I/P:176~264VAC SPEC:<br>O/P:FULL LOAD<br>A: ±0.5%<br>B: ±0.5%<br>C: ±0.5%<br>D: ±0.5%<br>E: ±0.5%<br>F: ±0.5%<br>G: ±0.5%<br>H: ±0.5%<br>I : ±0.5% | A: +0.00% ~ +0.00%<br>B: +0.00% ~ +0.00%<br>C: -0.08% ~ +0.00%<br>D: +0.00% ~ +0.00%<br>E: +0.09% ~ -0.06%<br>F: -0.00% ~ +0.04%<br>G: -0.05% ~ +0.03%<br>H: -0.04% ~ +0.11%<br>I : -0.02% ~ +0.06% | P |
| 3 | LOAD REGULATION | I/P:230VAC SPEC:<br>O/P:0% LOAD TO FULL LOAD<br>A: ±2%<br>B: ±2%<br>C: ±1.5%<br>D: ±1.5%<br>E: ±1.5%<br>F: ±1.5%<br>G: ±0.5%<br>H: ±0.5%<br>I : ±0.5% | A: -0.18% ~ +0.18%<br>B: -0.35% ~ +0.25%<br>C: -0.33% ~ +0.41%<br>D: -0.10% ~ +0.10%<br>E: -0.04% ~ +0.04%<br>F: -0.12% ~ +0.21%<br>G: -0.03% ~ +0.15%<br>H: -0.15% ~ +0.15%<br>I : -0.06% ~ +0.11% | P |
| 4 | OUTPUT VOLTAGE TOLERANCE | I/P:176~264VAC SPEC:<br>O/P: 20% LOAD TO FULL LOAD<br>A: ±3%<br>B: ±3%<br>C: ±2%<br>D: ±2%<br>E: ±2%<br>F: ±2%<br>G: ±1%<br>H: ±1%<br>I : ±1% | A: +0.00% ~ +0.36%<br>B: -0.76% ~ +0.00%<br>C: -0.59% ~ +0.08%<br>D: -0.10% ~ +0.05%<br>E: +0.00% ~ -0.13%<br>F: -0.33% ~ +0.00%<br>G: -0.13% ~ +0.10%<br>H: -0.02% ~ +0.39%<br>I : -0.19% ~ +0.03% | P |
| 5 | RIPPLE&NOISE | I/P:230VAC SPEC:<br>O/P: FULL LOAD<br>A:150mV<br>B:100mV<br>C:100mV<br>D:100mV<br>E:100mV<br>F:100mV<br>G:150mV<br>H:150mV<br>I :200mV | A: 26mV<br>B: 73mV<br>C: 43mV<br>D: 28mV<br>E: 21mV<br>F: 37mV<br>G: 28mV<br>H: 22mV<br>I : 23mV | P |
| 6 | AC INPUT CURRENT | I/P:230VAC SPEC: 1.5A<br>O/P:FULL LOAD | D:1.1A | P |
| 7 | MAX. INRUSH CURRENT | I/P:230VAC SPEC: 60A<br>O/P:FULL LOAD | D:38A | P |

NEXT

| NO | TEST ITEM | TEST CONDITION / SPECIFICATION | RESULT | VERDICT |
|---|---|---|---|---|
| 8 | O/P VOLTAGE ADJ.RANGE | I/P:230VAC SPEC: -5%~+10%<br>O/P:MIN. LOAD A:3.0V~3.6V<br>B:4.5V~5.7V<br>C:6V~9V<br>D:10V~13.2V<br>E:12V~15V<br>F:13.5V~18V<br>G:20V~26.4V<br>H:26V~32V<br>I:41V~56V | A:2.76V~4.04V<br>B:4.44V~6.25V<br>C:5.92V~9.28V<br>D:9.10V~13.70V<br>E:11.36V~16.12V<br>F:12.81V~17.00V<br>G:20.2V~27.6V<br>H:24.4V~32.6V<br>I :37.5V~59.4V | P |
| 9 | SET UP TIME | I/P:230VAC SPEC:800ms<br>O/P:FULL LOAD | D : 580mS | P |
| 10 | HOLD UP TIME | I/P:230VAC SPEC:20mS<br>O/P:FULL LOAD | D : 47mS | P |
| 11 | EFFICIENCY | I/P:230VAC SPEC:<br>O/P: FULL LOAD A:69%<br>B:77%<br>C:77%<br>D:79%<br>E:79%<br>F:80%<br>G:80%<br>H:81%<br>I :81% | A: 71.91%<br>B: 77.64%<br>C: 78.99%<br>D: 79.40%<br>E: 80.22%<br>F: 81.03%<br>G: 83.37%<br>H: 82.70%<br>I : 81.87% | P |
| 12 | OVER LOAD PROTECTION | I/P:230VAC SPEC:105%~140%<br>O/P:TESTING | A: 120%<br>B: 120%<br>C: 112.52%<br>D: 128%<br>E: 125%<br>F: 113.96%<br>G: 119.28%<br>H: 128%<br>I : 123.8% | P |
| 13 | OVER VOLTAGE PROTECTION | I/P:230VAC SPEC: 110%~135%<br>O/P: TESTING A:3.8~4.45V<br>B:5.75~6.75V<br>C:9.4V~10.9<br>D:13.8V~16.2V<br>E:15.5V~18.2V<br>F:18V~21V<br>G:27.6V~32.4V<br>H:33.7V~39.2V<br>I:57.6V~67.2V | A: 4.17V<br>B: 6.30V<br>C: 9.29V<br>D: 15.14V<br>E: 17.31V<br>F: 17.01V<br>G: 28.2V<br>H: 38.0V<br>I : 59.5V | p |
| 14 | GROUND LEAKAGE CURRENT | I/P:240VAC SPEC:<br>L-FG--<1mA<br>N-FG--<1mA | D: L-FG:0.75mA<br>N-FG:0.60mA | p |
| 15 | INSULATION RESISTANCE | SPEC: O/P-FG 500VDC / 100M Ohms MIN.<br>I/P-O/P 500VDC / 100M Ohms MIN.<br>I/P-FG 500VDC / 100M Ohms MIN. | D: O/P-FG >100M Ohms<br>I/P-O/P >100M Ohms<br>I/P-FG >100M Ohms | P |
| 16 | DIELECTRIC / WITHSTAND VOLTAGE | SPEC: I/P- O/P: 3000VAC/ 1 sec (10mA CUT-OFF)<br>I/P - FG: 1500VAC/ 1 sec (10mA CUT-OFF)<br>O/P - FG : 500VAC/1sec (10mA CUT-OFF) | D: I/P-O/P :4.84mA<br>I/P-FG :3.79mA<br>O/P- FG :8.76mA | P |
| 17 | BURN-IN TEST | I/P: 230VAC O/P:FULL LOAD<br>TA:27.2°C BURN-IN DURATION : 2.0 hrs | D: NON BREAK | P |

PREVIOUS NEXT

<table>
<tr><th>NO</th><th>TEST ITEM</th><th>TEST CONDITION / SPECIFICATION</th><th>RESULT</th><th>VERDICT</th></tr>
<tr><td rowspan="3">18</td><td rowspan="3">ENVIRONMENT TEST</td><td>1.LOW TEMPERATURE TEST<br>I/P:230 VAC O/P:FULL LOAD<br>AMBIENT TEMPERATURE:-9.9°C</td><td>D :<br>AFTER 2 hrs<br>POWER ON OK</td><td rowspan="3">P</td></tr>
<tr><td>2.HIGH AMBIENT TEMPERATURE FULL LOAD TEST<br>I/P:230VAC O/P:FULL LOAD<br>AMBIENT TEMPERATURE:42.8°C</td><td>D :<br>AFTER 18 hrs<br>NON BREAK</td></tr>
<tr><td>3.ACCELERATED LIFE TEST<br>I/P:264VAC O/P:FULL LOAD<br>POWER ON :10 sec POWER OFF :10 sec<br>AMBIENT TEMPERATURE:25°C<br>AMBIENT HUMIDITY:95%</td><td>D :<br>AFTER 13 hrs<br>NON BREAK</td></tr>
<tr><td>19</td><td>TEMPERATURE RISE TEST T rise OF PARTS</td><td colspan="2">D: I/P :230VAC AFTER 2.0 hrs BURN-IN<br>O/P :FULL LOAD TA:27.2°C
<table>
<tr><th></th><th>POSITION</th><th>P/N</th><th>TEMP</th><th>T rise</th></tr>
<tr><td></td><td>BD1</td><td>BRIDGE DIODE</td><td>71.3°C</td><td>44.1°C</td></tr>
<tr><td></td><td>Q1</td><td>MAIN TRANSISTOR</td><td>88.3°C</td><td>61.1°C</td></tr>
<tr><td></td><td>T1CORE</td><td>MAIN TRANSFORMER</td><td>74.1°C</td><td>46.9°C</td></tr>
<tr><td></td><td>D11</td><td>O/P DIODE</td><td>86.3°C</td><td>59.1°C</td></tr>
<tr><td></td><td>C42</td><td>O/P FILTER CAPACITOR</td><td>59.6°C</td><td>32.4°C</td></tr>
<tr><td></td><td>L1</td><td>O/P CHOCK</td><td>71.9°C</td><td>44.7°C</td></tr>
<tr><td></td><td>T1COIL</td><td>MAIN TRANSFORMER</td><td>69.4°C</td><td>42.2°C</td></tr>
<tr><td></td><td>C6</td><td>I/P FILTER CAPACITOR</td><td>60.8°C</td><td>33.6°C</td></tr>
<tr><td></td><td>LF1</td><td>I/P FILTER COIL</td><td>50.7°C</td><td>23.5°C</td></tr>
</table></td><td>P</td></tr>
<tr><td>20</td><td>LIFE CYCLE</td><td colspan="2">D : SUPPOSE C42 IS THE MOST CRITICAL COMPONENT<br>I/P:230VAC O/P:FULL LOAD Ta:25°C Tc42:57.4°C Life:199510 hrs<br>I/P:230VAC O/P:FULL LOAD Ta:45°C Tc42:69.1°C Life:89301 hrs</td><td>P</td></tr>
<tr><td>21</td><td>CRITICAL COMPONENT RECORD ( FOR QC INSPECTION REFERENCE ONLY )</td><td colspan="3">D :<br>FUSE :4A/250VAC GFE<br>BRIDGE DIODE :D3SB60<br>LINE FILTER :TF-485 ET-28H<br>TRANSFOMER :TF-454-1 EER-28L<br>POWER SWITCHER :2SK2850 TO-3P<br>OUTPUT DIODE :S20LC20<br>OUTPUT CAPACITOR :RUBYCON 2200uF/16V 105°C, LXJ<br>INPUT CAPACITOR :RUBYCON 330uF/250V,CE,85°C<br>P.C.B :LPS-100-R1 ,CEM-3 , 2 OZ SS</td></tr>
<tr><th>DATE</th><th>SAMPLE</th><th colspan="2">TEST RESULT</th><th>TEST</th><th>APPROVAL</th></tr>
<tr><td>19980312</td><td>PRODUCTION SAMPLE</td><td colspan="2">PASS</td><td>H.C.LIOU</td><td>Max Lin</td></tr>
<tr><td>19981209</td><td>9812A03A (5V,27V)</td><td colspan="2">PASS</td><td>H.C.LIOU</td><td>Max Lin</td></tr>
<tr><td>19981222</td><td>9812B02B (48V)</td><td colspan="2">PASS</td><td>H.C.LIOU</td><td>Max Lin</td></tr>
<tr><td>19990111</td><td>9901A17A (3.3V)</td><td colspan="2">PASS</td><td>H.C.LIOU</td><td>Max Lin</td></tr>
<tr><td></td><td>A0009C03</td><td colspan="2"></td><td></td><td></td></tr>
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|---|---|---|---|---|
| 20000930 | (3.3V) | PASS | VINCENT | Max Lin |
| 20001021 | A0010B05 (12V,13.5V,27V) | PASS | VINCENT | Max Lin |



PREVIOUS